

Making Education Fun

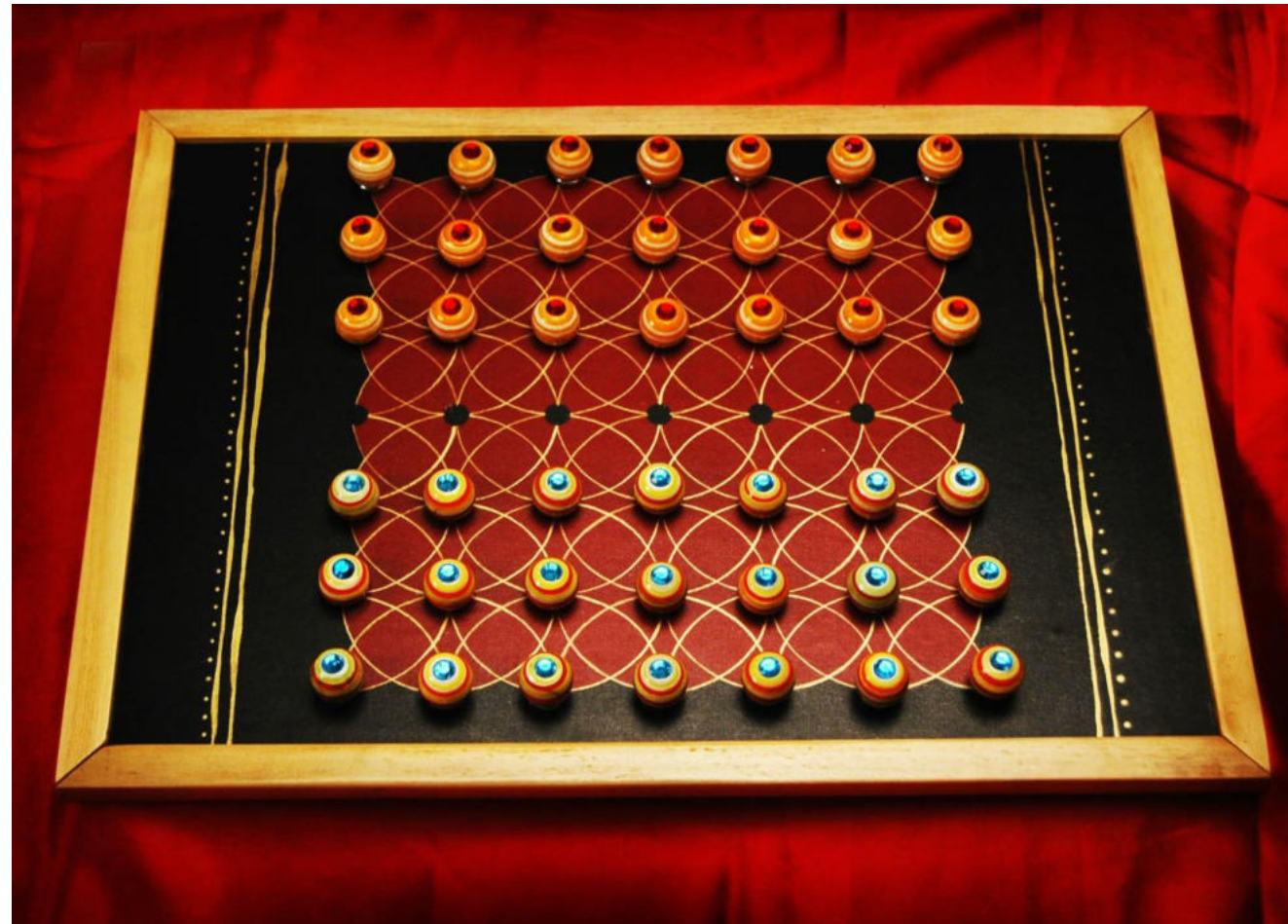
(a workshop on Gamification of education)

By Vasundhara Agrawal

Introduction

- The purpose of this project was to make education fun for the kids .
- To decrease the number of dropouts at the primary education level by making school an attractive place.
- To encourage peer learning in order to address the problem of shortage of teachers in schools .
- To understand the process of game design.
- To learn the difference between gamification and making games and understanding their advantages.

Improving the Chakra View



Suggested Improvements

- Making the layout bigger as the game has a deadened if both the teams work as a defence.
- Making the board layout better and more interactive in terms of adding groves to the board
- Adding wheels to the token such that the sliding action of the tokens adds fun to the game.
- Since it is a complex game there should be facility to enable voice instructions
- To introduce power or rewards on particular moves
- To make the game visually more colourful

What makes game a game?

- Rules + Guidelines
- Risk
- Patterns
- Accomplishment/ winning & losing
- Skills involved
- Luck oriented
- Interactive
- Unpredictable
- Levels
- Competitive
- Entertaining/ enjoyment
- Fantasy world
- Story
- Role play
- Use of Artefacts
- Physical or Mental
- Real life Context
- Game mechanics
- Resources
- Relative Advantage
- Relaxation
- Learning
- Imagination
- Rewards / Power
- Target Audience
- Surprises
- Themes

Common elements between game and animation?

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Spell Karo!

Spell Karo!

Segregation of the Syllabus

	Unitary method	Profit and Loss	Percentage	Average	Simple Interest
Class 4	understanding the concept of unitary method,	Add amounts upto a sum of 100			
	given the cost of multiple object find cost of one	convert rupees to paise and vise versa			
	given the cost of one find cost of multiple	explain the concepts of cost price, selling price, profit and loss			
		solve everyday problems			
Class 5	above all + Given the cost of a set of objects to find the cost of another set of objects	above all+ problems of increased difficulty	meaning of percentage and to determine percentages	the concept of average	concept of Simple Interest
		calculation of profit and loss using percentage	convert decimal to percentage	determine average and to express it with the respective units	explain the concept of principal, interest, rate, time, amount
			convert percentage to decimal	solve problems related to average	calculate interest, amount and principal using formulas
			determine the percentage of a given amount		calculate simple interest problems using formulas
			Uses of percentage in daily life		



Initial Brainstorming & Play-testing

- Analysing each topic
- Assessing the difficulty areas
- Analysing the aspect of physical activity Vs mental activity
- Amount of calculation mental & written



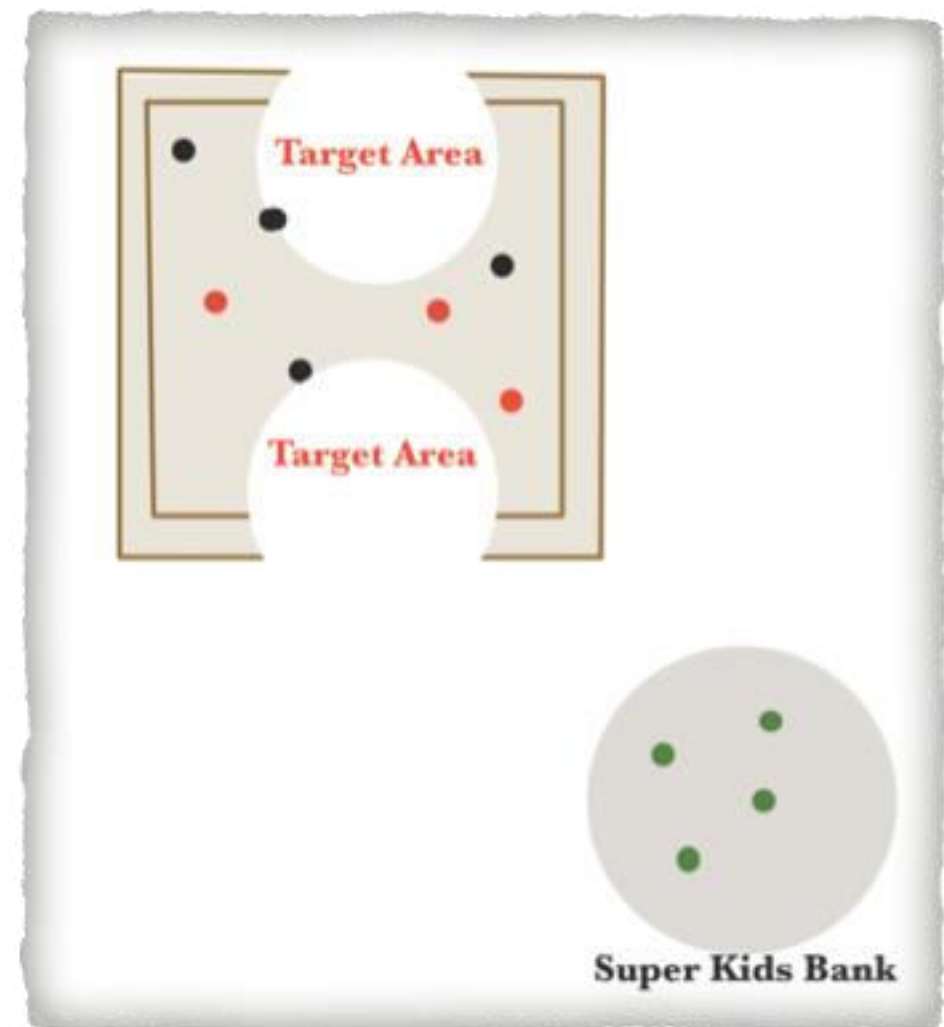
- Making paper prototypes
- Play-testing with the kids
- Taking notes and understanding difficulty areas

Why gamify Simple Interest?

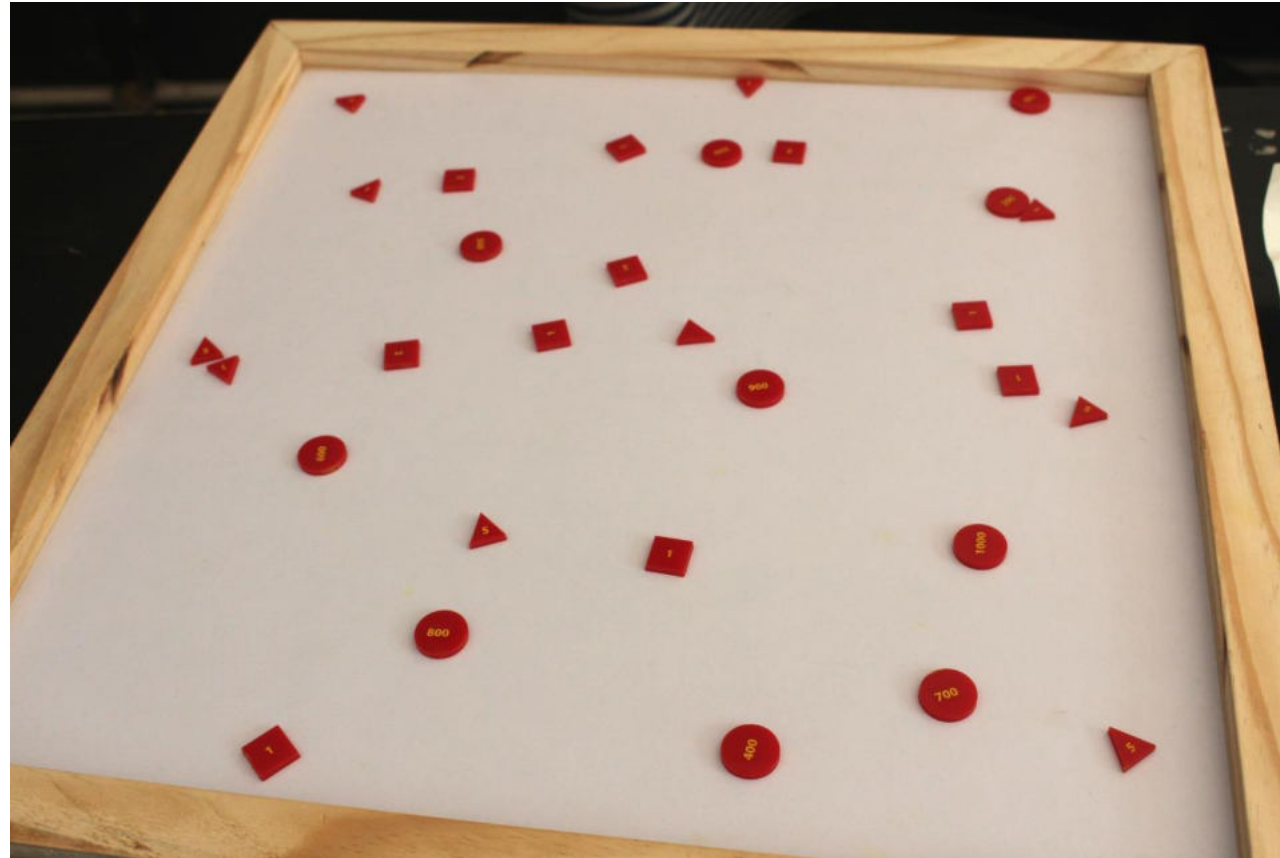
- Introducing a concept of saving
- Understanding the concept of bank
- Introduction to the concept of principal amount, rate , time and interest
- Understanding the profit a bank makes by taking interest on the lent amount
- Why people borrow money from the bank - The concept of property
- Understanding the concept of paying interest
- Understanding of the concept of choosing a beneficial interest rate
- Breaking the fear and monotone of complex calculation
- The topic has multiple aspects like use of multiple operations, concept of percentage as well as profit and loss.

Initial Game Concepts

- Converting each element like principal, time and rate into a separate token.
- To strike one token with the other to represent multiplication.
- To add a skill element by introducing a particular hit sequence after scattering all the tokens randomly on a board or smooth surface.
- Introducing a scenario of bank agents trying to determine the best interest combinations for the bank
- Idea of a common pool to chose principal amount and then hit the other coins from a target area



Initial Designs



- Using different shapes to represent elements of principal amount, rate and time
- All tokens of the same colour
- Values of principal, time and rate written on the tokens
- A board or smooth surface to strike the tokens.

Difficulties and Failures

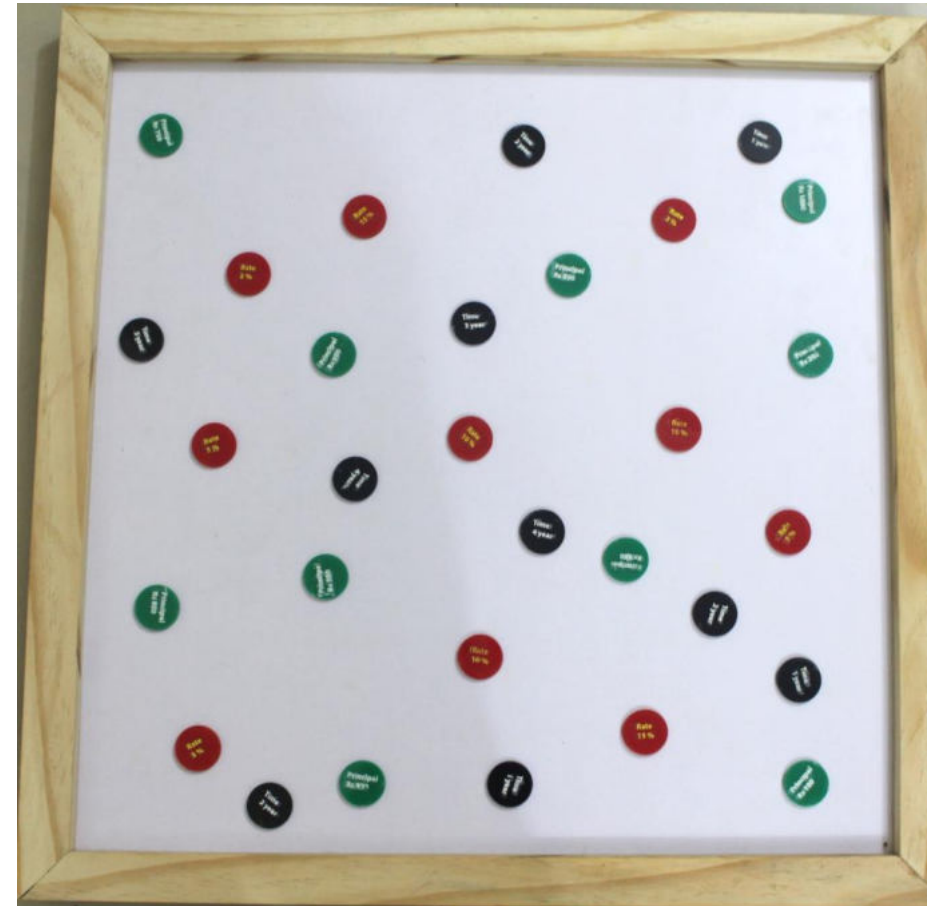
- The idea of acting as the agents of the bank does not apply to the common mans scenario so it is difficult to relate to.
- Idea of a common pool to chose principal amount and then hit the other coins becomes too luck based and limits the number of choices.
- All tokens were of the same colour hence difficult to distinguish
- All the tokens were of different shapes so children started calling them by shapes rather than the element they represented hence the purpose was defeated
- The fun element was missing, the game was flat and same paced.

Changes and Improvements



Changed

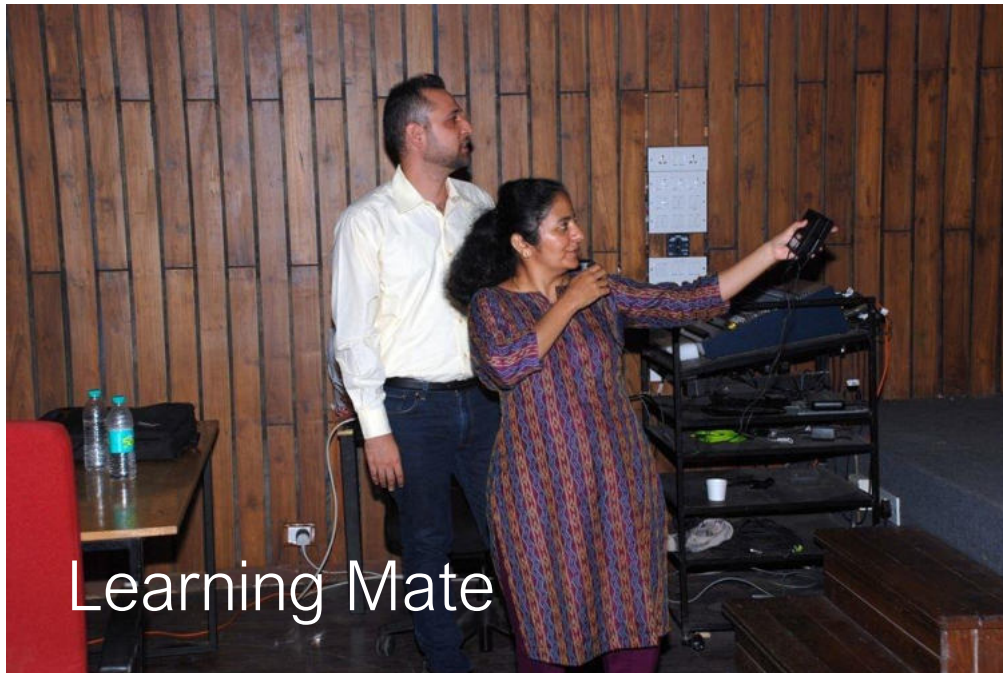
- Shape
- Colour
- Detailed the Coins



Stuck to the random scatter pattern

But Still the Fun element was missing

Presentations, Discussions & Feedbacks



Learning Mate



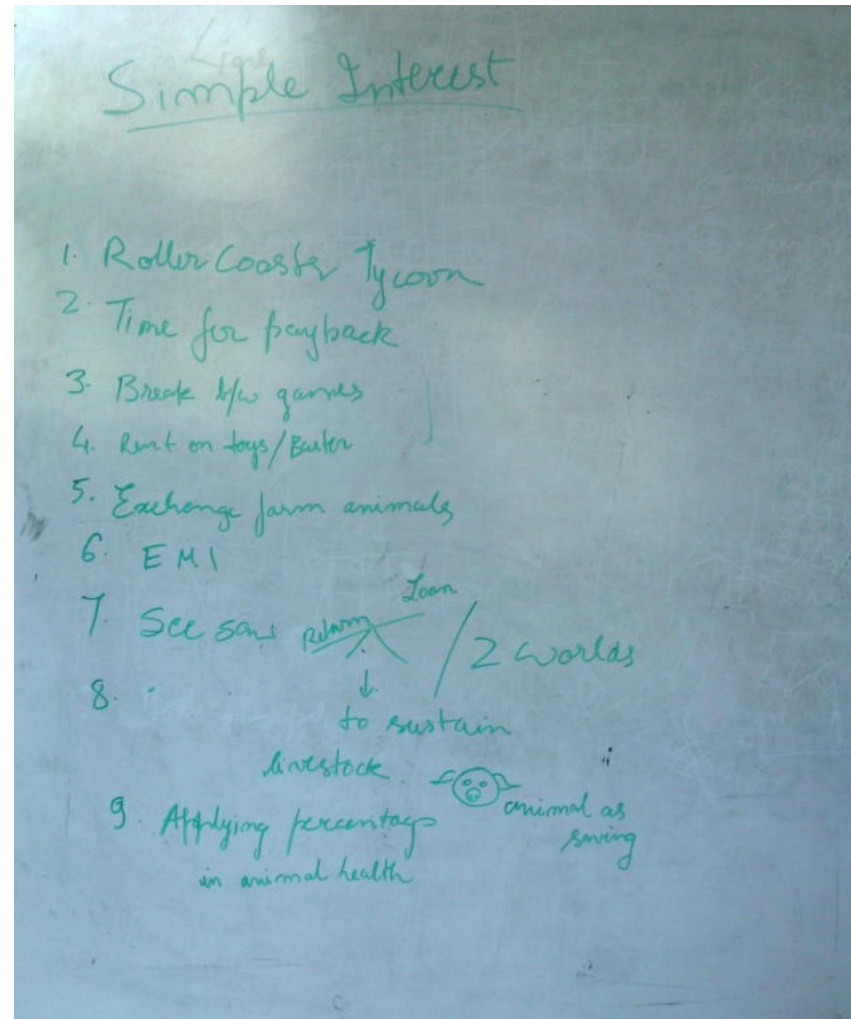
Edu is Fun



Puzzle Dosh



PaperBoat Animation



BrainStorming Session





Discussion with Athvankar Sir

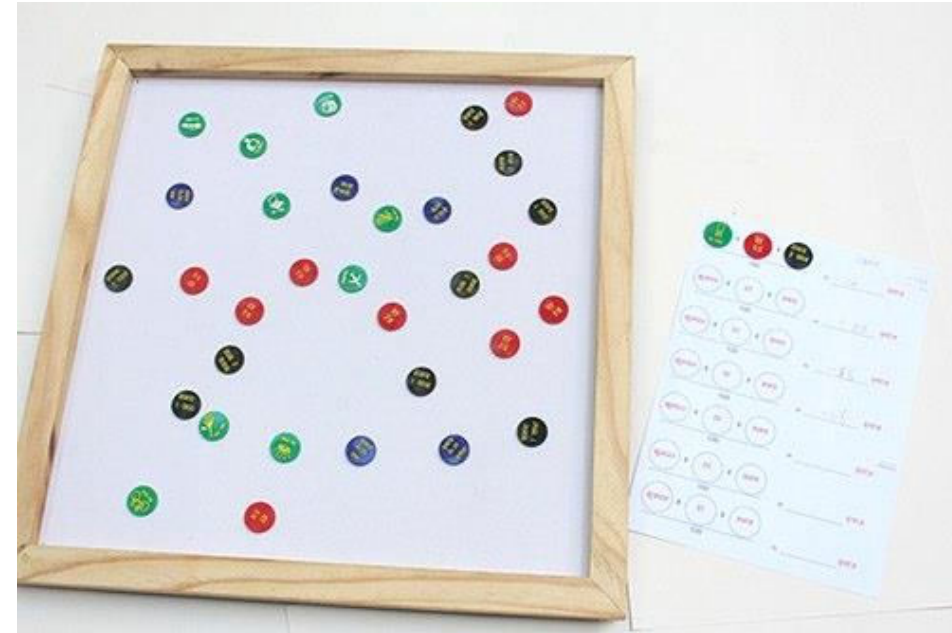


Discussion with Other Teams

Final Concept

- To enable kids understand the concept of principal amount, rate of borrowing and the time for which a sum is borrowed.
- Each Player is given an initial savings amount
- The coins of principal amount now have a property image on them. 
- Special coins of interest exemption (byaj maaf), interest reduction (byaj kam) and interest increment (byaj jyada) were introduced. 
- A calculation sheet for making the calculation easy.
- The players being a smart citizen have to try to get the least amount of interest combinations and save maximum amount from their savings.
- Also a small luck element was introduced by choosing some principal coins in the beginning of the game.

Game Images & Video



IDC
Presents

Byazigar the digital version

- The concept of the game was the same as the physical game
- The game could be player by kids of 5th standard and above
- The primary difference between the physical and the online version being in the :
 - Interface of the game
 - The mechanics of the game
 - Look and feel of the game
 - Progressive mechanics of the game

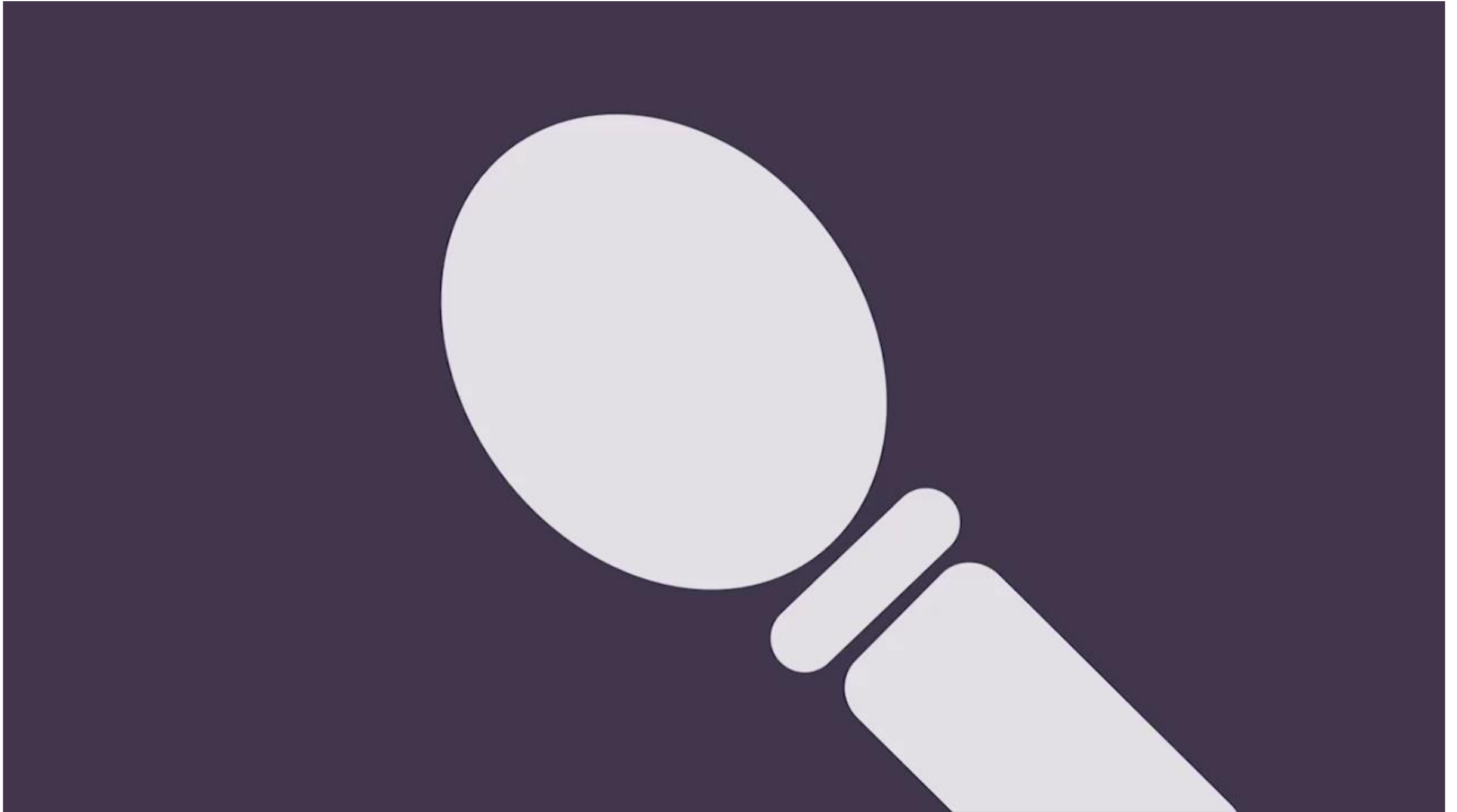
Change in the Progressive mechanics

- The digital version of the game offers more perks and rewards as it eliminates the hardware cost.
- The interest exemption and reduction tokens can be hidden at places and make surprise appearance from time to time.
- Number of players can be increased in the digital version since more coins can be released on the board in instalments.
- The players have more scoop to strategies and target the desired coins from the queue.

Theme



Backstory



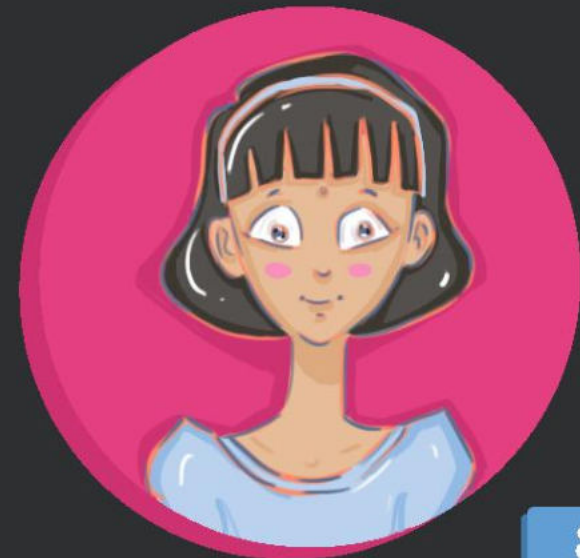
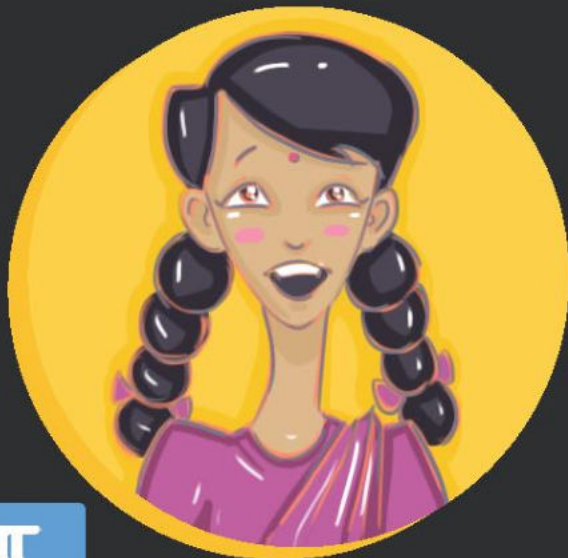
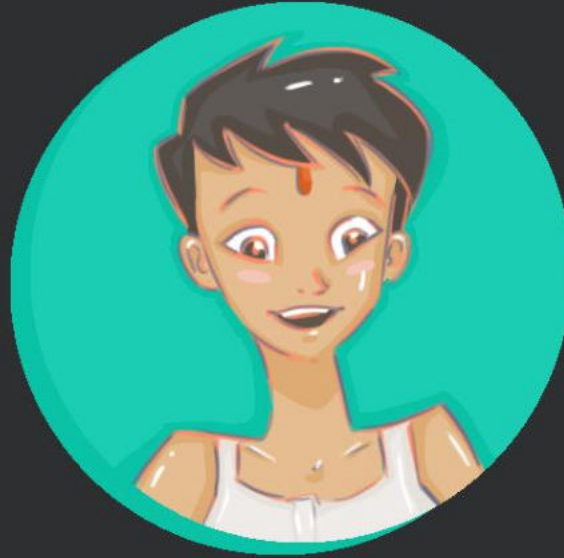
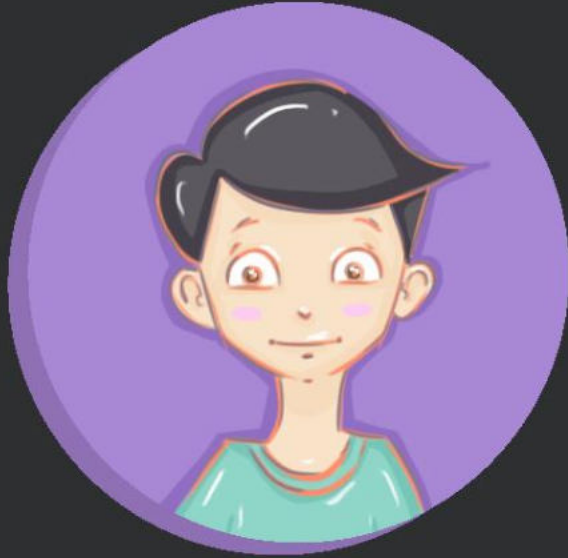
Menu Screen

नियम

अवतार

स्तर

Avatars



पठिला

अपला

Enter your name:

खिलाड़ी का नाम

Game Screen



Technology

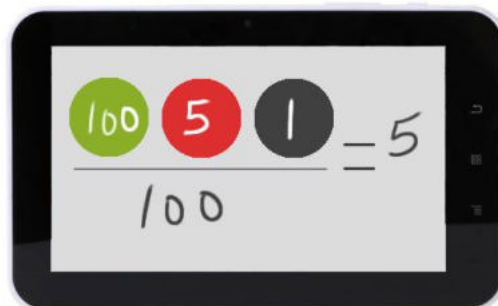
Independent



Hybrid



And/ Or



Tablet aided with physical things like

- Property tokens and timer



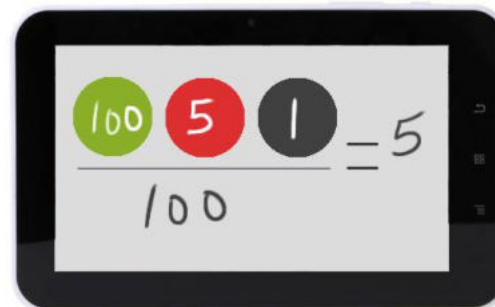
- Buzzer or bell



- Pen and Paper for calculation

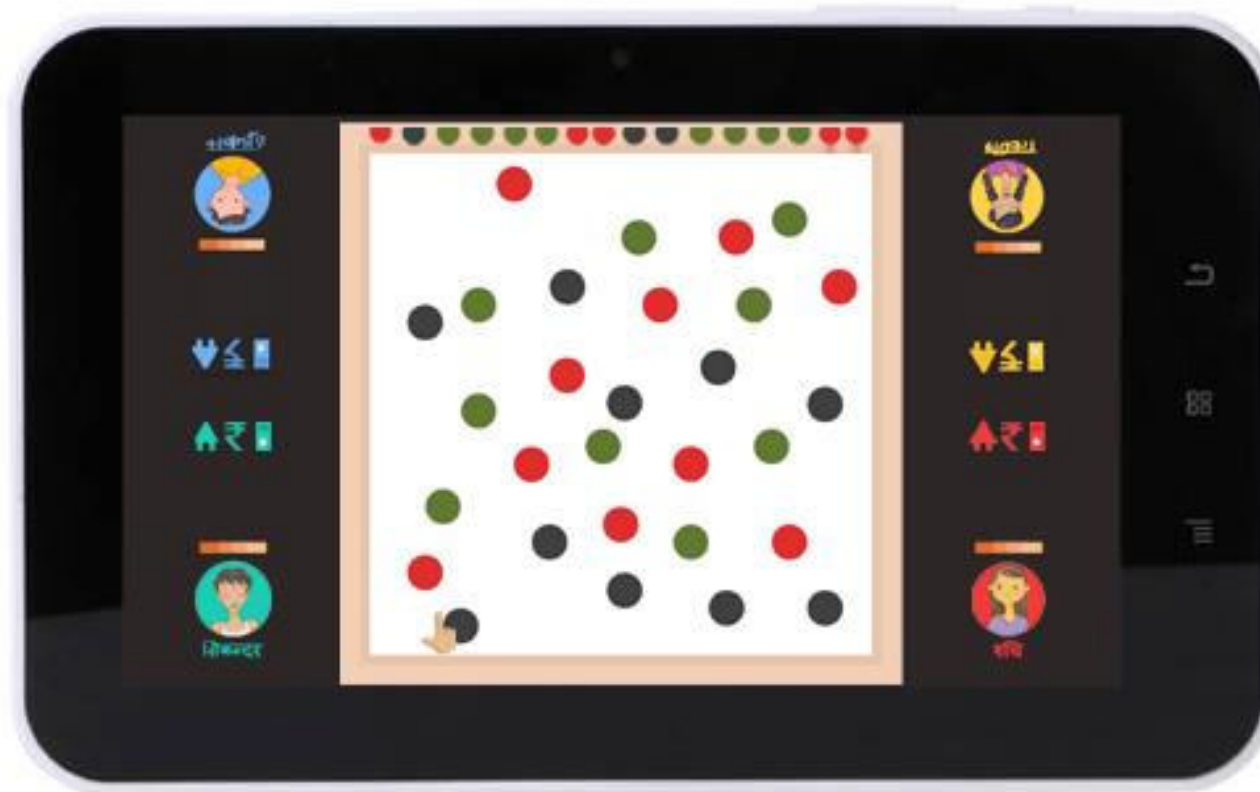


2 Player Game

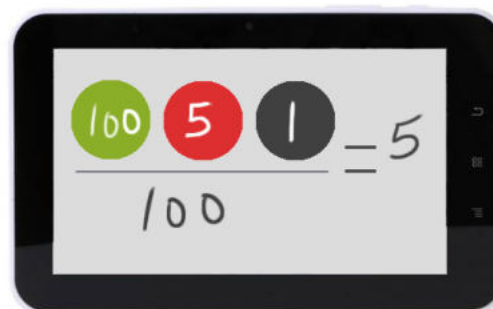


Tablet for Calculation

4 Player Game



+



All 4 Players share the same Tablet for calculation

4 Player Game



2 Players share one Tablet for Calculation

4 Player Game



All 4 Players have independent Tablets for Calculation

Configuration



4 Players Sitting Arrangement



2 Players Sitting Arrangement

Evaluations and Conclusion

- The game got a good feedback in terms of the topic it attempted to gamify. The topic of simple interest is a complex yet essential topic that doesn't interest everyone, hence the idea to gamify it was very good.
- The game mechanics was appreciated especially for the digital version of the game.
- A very interesting proposal to shake the tablet was made in order to add more fun by disturbing the arrangement of the coins for the opposition players
- Another very interesting idea which came up during the discussion was of actually showing the coins merge into each other when they strike each other to show the action of multiplication.
- The game needs to be presented to the Madhya Pradesh education team for implementation and improvement

Thank You